

I, OPERATING INSTRUCTION

MODEL MA-120 SERIES

ORIGINAL JUNE, 1977

(REVISED)

MATERIALS, NO.E1-0133

PATENT PENDING

T&E TOKYO ELECTRIC CO.,LTD.

PRINTED IN JAPAN
77061000 ©

CONTENTS

TO OUR CUSTOMERS

1. Preparation for Operation.....	2
2. Arrangement of Keyboard and Uses.....	3
3. Display Lamp	4
4. Control Lock and Control Key.....	4
5. Setting the Date	4
6. Registering Procedures of Sales	5
7. Registering during Power Failure	8
8. Examining Sales Total during Business Hour (Read).....	8
9. Resetting of Sales	8
10. Closing of Sales and Preparation of Operation for Next Day	8
11. Unloading the Journal Paper.....	9
12. Loading the Receipt Paper and Journal Paper	10
13. Business Records Give Exact Sales Details	12
14. Releasing the Drawer.....	13
15. Replacing Ink Ribbon	13
16. Removing the Store Message Stamp	15
17. Re-Inking to the Store Message Stamp	16
18. Maintenance and Inspection Requirements	16
19. Other Precautions	16
20. Specifications of TEC Electronic Cash Register, Model MA-120 Series.....	17

- *The specifications described in this manual may be modified by TEC, if necessary.*
- *Be sure to keep this manual for future reference.*

TO OUR CUSTOMERS

This owners manual provides a description about the functions and handling of the TEC Electronic Cash Register Model MA-120 Series and should be read carefully to obtain maximum performance from your register. Since ample consideration has been given to safety devices, there is no danger of damaging the machine by erroneous operation. Please read this manual whenever you have any doubts concerning the operation of machine.

This machine has been manufactured under strict quality control and should give you full satisfaction. However, if the machine is damaged during delivery, or there are unknown points in this manual, please contact your local TEC dealer where you purchased the machine.

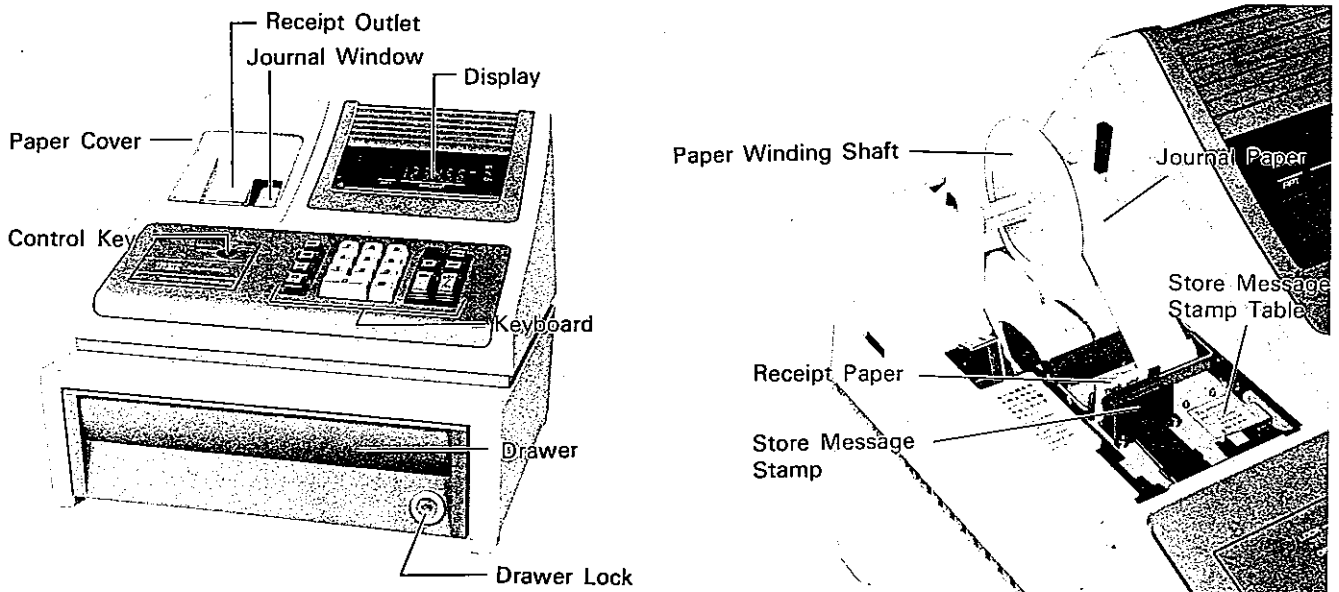
Further, it is recommended to retain this owners manual with you for your future reference after you have read through.

PREFACE

TEC Electronic Cash Register, Model MA-120 Series is a small sized and highly efficient electronic cash register developed through concentration of the latest electronic technology of TEC, with a highly efficient printer developed by TEC incorporated. MOS-LST (micro computer system) has been incorporated in the principal parts to provide high reliability as well as durability.

The highly efficient printer issues clearly printed journals as well as receipts with commercial printing printed, and the memory is wholly protected even during power failure. Although being small in size, Model MA-120 Series registers have sufficient memory capacity; for instance, Model MA-121S has a 8 digits memory capacity. In addition, all of functions necessary for an electronic register have been fully incorporated.

• NOMENCLATURE



1. PREPARATION FOR OPERATION

For ensuring proper operation of this electronic register, the following procedures are required to be followed before operating the register.

- (1) Plug the cord of the register into the power source.
- (2) Check to ensure that detail tape and receipt tape are properly loaded in place.
- (3) Turn the control lock with M_A key and position the lock to access Read (X) mode of operation.
- (4) Set date following the procedure described in Paragraph 5.
- (5) Turn the control lock to access Register (REG) mode of operation, then press the **NS** key to confirm that the date is correctly printed on the receipt.

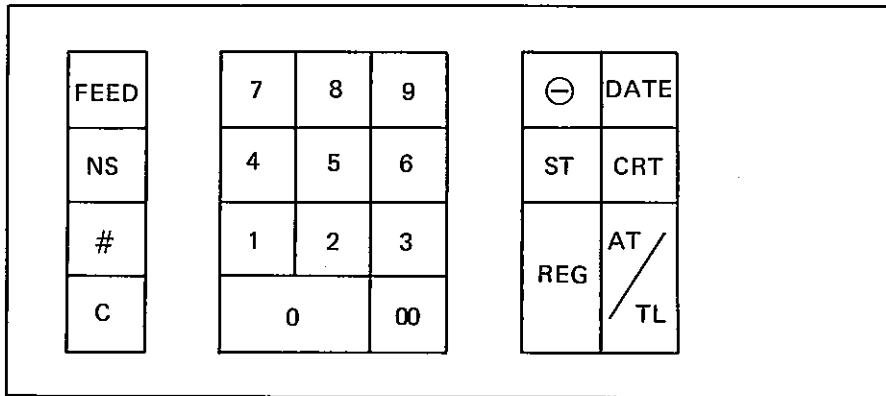
Above completes all preparations required for registration by the register.

FOR ENSURING LONGER SERVICE LIFE OF THE REGISTER, PLEASE OBSERVE FOLLOWING PRECAUTIONS.

- **Operate the register properly with grounding for safety.**
- **Location of the register**
It is inadvisable to place the register at such a location as exposed directly to sun beams for a long hour, adjacent to a heater, or in dusty or humid atmosphere.
- **Other precautions**
Although the TEC Electronic Register Model MA-120 Series have been manufactured under strict quality control, should any troubles occurred, do not touch the terminals, but unplug the power cord immediately from the plug socket, and contact your local TEC dealer where you purchased the register as soon as possible. Technical serviceman will be immediately dispatched. When your register is not used, cover it with an attached dust cover. In addition, it is recommended to keep a record of Model No. and Serial No. of your register stamped on the name plate provided at the lower right side of the front panel.

2. ARRANGEMENT OF KEYBOARD AND USES

MA-121S Standard

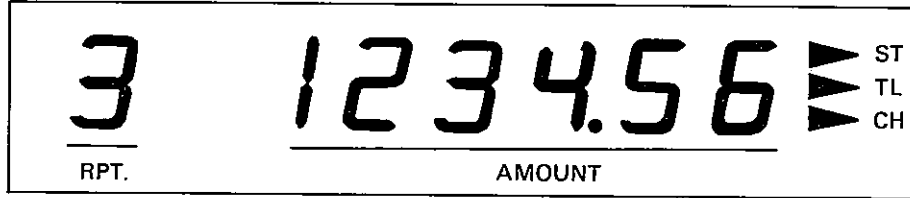


● Function of keys

- (1) Feed key: FEED
To be employed for feeding journal and receipt papers.
- (2) No sale key: NS
To be employed at time of opening the drawer for exchange.
- (3) Non add key: #
Used as a marking key for code numbers.
- (4) Clear key: C
To be employed for correction of a set amount, release from an error, and erasure of display.
- (5) Amount key (ten-key type): 0 - 9 00 (1/2)
These amount keys are used for setting amount, date, and code number.
- (6) Register key: REG
To be employed to enter items of a sale. In addition, the repeated registration also can be performed. (But, no item classification can be made.)
- (7) Minus key: ⊖
To be employed for discount registration.
- (8) Date key: DATE
To be employed for setting date.
- (9) Sub-total key: ST
To be employed to obtain the sub-total amount during registration.
- (10) Credit sales total key: CRT
To be employed for totalling amounts of credit sales.
- (11) Amount Tendered/Total Key: AT/TL
This key is used for totalling amount of cash sales. When this key is pressed without any amount set the total of a transaction is obtained. While this key is pressed with entering the amount tendered, the change due the customer will be automatically obtained.

3. DISPLAY LAMP

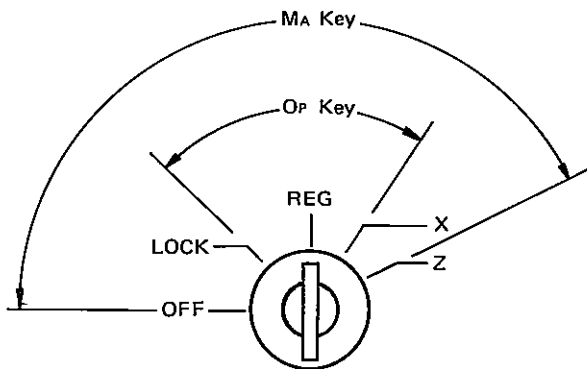
MA-121S

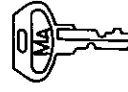



Amount: Displays registered amount, total amount, date and code number.


RPT: Normally, "1" is displayed when one registration is made. When the same registrations are repeatedly made, number of repetition is displayed. When number of repeated registrations reaches to 10, "0" is displayed, and thereafter the last digit only is displayed.

4. CONTROL LOCK AND CONTROL KEY



- 

MA key This key is used by a store message and can turn the lock to access all modes of operation.
- 

Op key This key is used by an operator and can turn the lock to access LOCK, REG and X modes of operation.
- 

Drawer key This key is used to lock the drawer. To lock the drawer insert this key into the lock, then turn the lock clockwise by about 180°.

OFF..... Electric power is turned off at this position.

LOCK..... Provides lock register condition.

X..... Describes read mode of operation.

The total of sales can be examined with the AT/TL key and date is set in this mode.

Z..... Describes reset mode of operation.

The total of sales can be reset to zero with the AT/TL key in this mode.

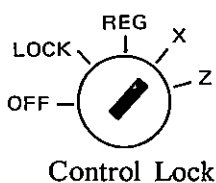
NOTE:

- 1) Do not put control keys in the drawer when closing it.
- 2) Do not turn the control lock to "OFF" position before resetting sales total to zero. All memory contents that has been entered thus far will be cleared.

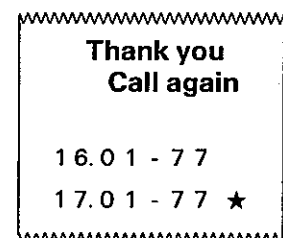
5. SETTING THE DATE

The date is set in the (X) mode of operation. Insert Op or MA key and turn the key clockwise to the (X) position. Enter the date as 6-digits, two for the month, two for the date and two for the year. Depress DATE key to complete the date entry.

Example: 17 January, 1977



→ 170177 (Date) → DATE



6. REGISTERING PROCEDURES OF SALES

Registration of various types of sales shall be made according to following examples of registration.

I. Cash sales registration

(1) Multiple item registration

(Example 1)

Price	\$5.80	\$0.85	\$18.10
Quantity	1	3	1

● Key operation

Amount key 5 8 0
 Register key REG
 Amount key 8 5
 Register key REG
 Register key REG
 Register key REG
 Register key REG
 Amount key 1 8 1 0
 Register key REG
 AT/TL key AT/TL

```

  ~~~~~
  Thank you
  Call again

  17.01 - 77
  .....5.80
  .....0.85
  .....0.85
  .....0.85
  ....18.10
  ...26.45 CA
  .....1 No.
  ~~~~~
  
```

(2) Multiple item registration including change computation

(Example 2)

Price	\$12.30	\$1.50	\$6.20
Quantity	2	2	1
Amount tendered	\$40.00		
Change	\$ 6.20		

● Key operation

Amount key 1 2 3 0
 Register key REG
 Register key REG
 Amount key 1 5 0
 Register key REG
 Register key REG
 Amount key 6 2 0
 Register key REG
 ST key ST
 Amount key 4 0 00
 AT/TL key AT/TL

```

  ~~~~~
  Thank you
  Call again

  17.01 - 77
  ....12.30
  ....12.30
  .....1.50
  .....1.50
  .....6.20
  ...33.80 ◇
  ...40.00 AT
  .....6.20 CH
  .....2 No.
  ~~~~~
  
```

NOTE:

- When the amount tendered is less than the sub-total of a transaction, an error condition will occur with an amount and the decimal points illuminated.
 Depress the **C** key to clear an error and re-enter an amount that is equal to or more than the sub-total then depress the **AT/TL** key.
- The alarm buzzer that sounds alarm-tone, when an error condition occurred, is available as a customer option.
 Consult your TEC representative when this is required.

(3) Multiple item registration with discount

(Example 3)

Price	\$18.50	\$3.20
Quantity	1	2
Discount	\$ 0.50	
Amount tendered	\$30.00	
Change	\$ 5.60	

● Key operation

Amount key 1 8 5 0
 Register key REG
 Amount key 3 2 0
 Register key REG
 Register key REG
 Amount key 5 0
 Minus key ⊖
 ST key ST
 Amount key 3 0 00
 AT/TL key AT/TL

```

    Thank you
    Call again

    17.01 - 77
    . . . 18.50
    . . . 3.20
    . . . 3.20
    . . . 0.50 ⊖
    . . . 24.40 ◇
    . . . 30.00 AT
    . . . 5.60 CH
    . . . . . 3 No.
    
```

2. Credit sales registration

For credit sales, use **CRT** key instead of **AT/TL** key.

(Example 4)

Price	\$5.30	\$1.30
Quantity	2	1

● Key operation

Amount key 5 3 0
 Register key REG
 Register key REG
 Amount key 1 3 0
 Register key REG
 ST key ST
 CRT key CRT

```

    Thank you
    Call again

    17.01 - 77
    . . . . 5.30
    . . . . 5.30
    . . . . 1.30
    . . . 11.90 ◇
    . . . 11.90 CR
    . . . . . 4 No.
    
```

3. No sale registration

(Example 5)

In case of exchange registration, depress **NS** key.

NOTE:

NS key can not be pushed with an amount set.

```

    Thank you
    Call again

    17.01 - 77
    . . . . . NS
    
```


● Example of registration for British Standard Register

(Example 6)

Price	£1.20	£0.55½	£2.40½
Quantity	1	2	1
Amount tendered	£5.00		
Change	£0.28½		

● Key operation

Amount key 1 2 0
 Register key REG
 Amount key 5 5 1/2
 Register key REG
 Register key REG
 Amount key 2 4 0 1/2
 Register key REG
 ST key ST
 Amount key 5 0 0
 AT/TL key AT/TL

Thank you
Call again

1.101. - 77

••• 1.20
 ••• 0.55½
 ••• 0.55½
 ••• 2.40½
 ••• 4.71½ ◊
 ••• 5.00 AT
 ••• 0.28½ CH
 ••••• 1 No.

● Example of registration for Italian Standard Register

(Example 7)

Price	L100	L150	L200
Quantity	1	3	2
Amount tendered	L1,000		
Change	L 50		

● Key operation

Amount key 1 00
 Register key REG
 Amount key 1 5 0
 Register key REG
 Register key REG
 Register key REG
 Amount key 2 00
 Register key REG
 Register key REG
 ST key ST
 Amount key 1 0 00
 AT/TL key AT/TL

Thank you
Call again

1.101. - 77

•••• 100
 •••• 150
 •••• 150
 •••• 150
 •••• 200
 •••• 200
 •••• 950 ◊
 ••• 1.000 AT
 ••••• 50 CH
 ••••• 1 No.

7. REGISTERING DURING POWER FAILURE

In the event of power-loss, the memory is protected for nearly one hour.
The interrupted entry of a transaction can be continued after the return of power.

8. EXAMINING SALES TOTAL DURING BUSINESS HOUR (READ)

- Set the total control lock to the position of "X" with O P key.
- Depress AT/TL key.
- Total of various sales is printed together with the symbol of "X" and receipt is issued. In addition, the same printing is also made on the journal paper and the drawer is released.
- Since this operation is the read operation, the total sales amount is kept in the memory of the register and succeeding registrations are added.

9. RESETTING OF SALES

When business is over, reset sales total accumulated.

- Set the total control lock to the position of "Z" with M A key.
- Depress AT/TL key.
- Total of various sales is printed together with the symbol of "Z" and receipt is issued. In addition, the same detail is also made on the journal paper and the drawer is released.
- When the reset operation is over, the total amount registered in this register is cleared to "0".

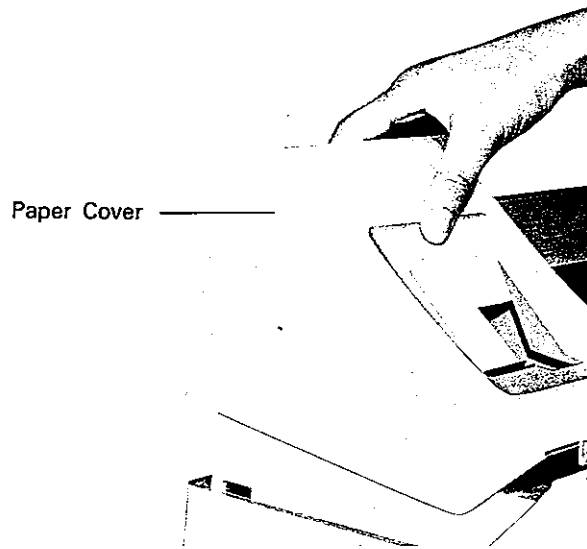
10. CLOSING OF SALES AND PREPARATION OF OPERATION FOR NEXT DAY

- After resetting, sum up and collate cash in the drawer, and leave the drawer open.
- Reset the total control lock to the position "OFF", and pull "M A" key out.
- Remove the paper cover, cut off and keep the printed journal paper.
- Confirm availability of the remaining journal paper and load it to the paper winding shaft.

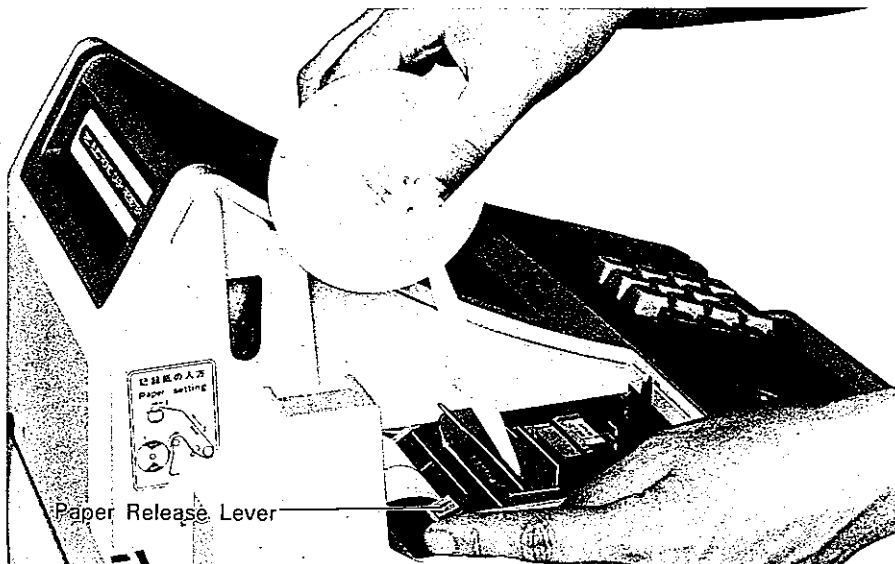
11. UNLOADING THE JOURNAL PAPER

When the register is cleared or the journal paper runs out, the journal paper shall be replaced in the following manner.

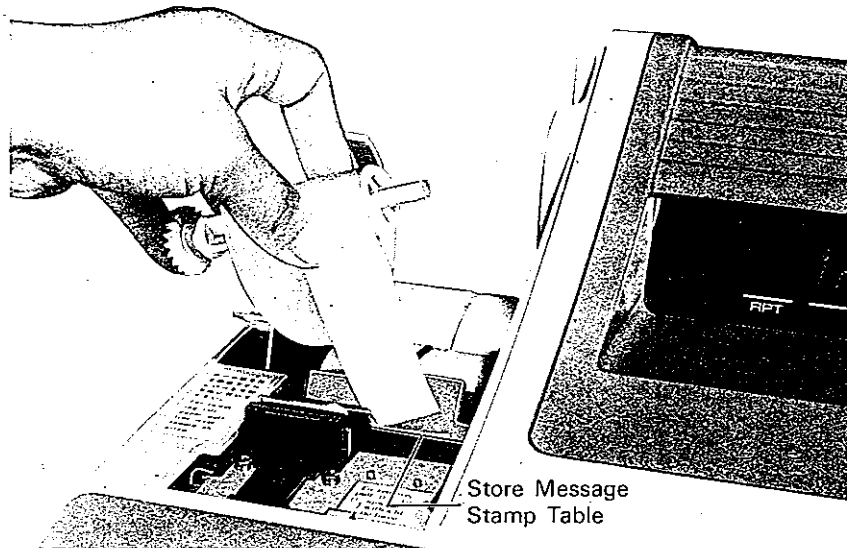
- 1) Lifting the front end of the paper cover, remove it by lifting rearward.



- 2) Remove the paper winding shaft from the shaft holder. While pushing the paper release lever toward you, unroll the detail paper upwards until the last printed record comes above the edge of writing table.



- 3) Holding the paper winding shaft, cut off the journal paper at the edge of the stamp table.



- 4) Remove the journal paper from the paper winding shaft.

NOTE:

- 1) To re-load the journal paper onto the paper winding shaft, pull out the remaining tip of journal paper while pushing Paper Release Lever towards you.
- 2) When the printed journal paper is rolled up fully onto the paper winding shaft, the paper can no longer be rolled up. In this case, cut off the printed paper according to above steps.

12. LOADING THE RECEIPT PAPER AND JOURNAL PAPER

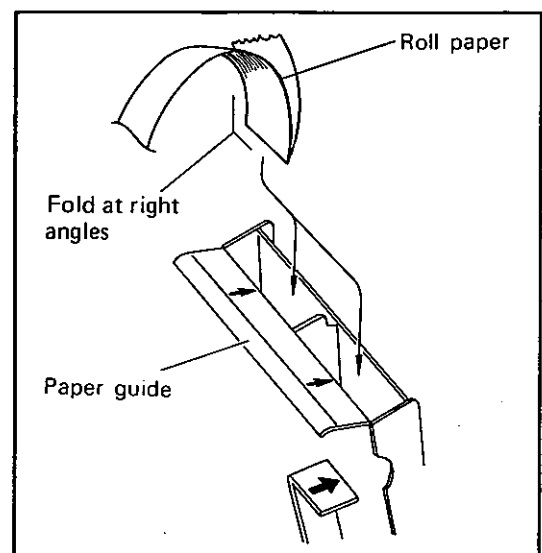
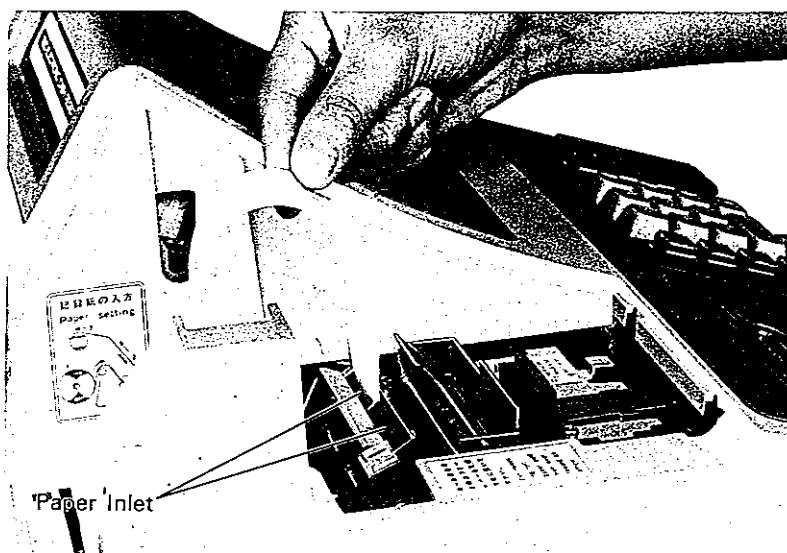
New receipt paper and journal paper shall be loaded on the following steps.

- 1) When the receipt paper or journal paper runs out, cut off and take out the existing paper core.
- 2) Then, by depressing **FEED** key, pull the receipt paper or journal paper tip remained out upward.

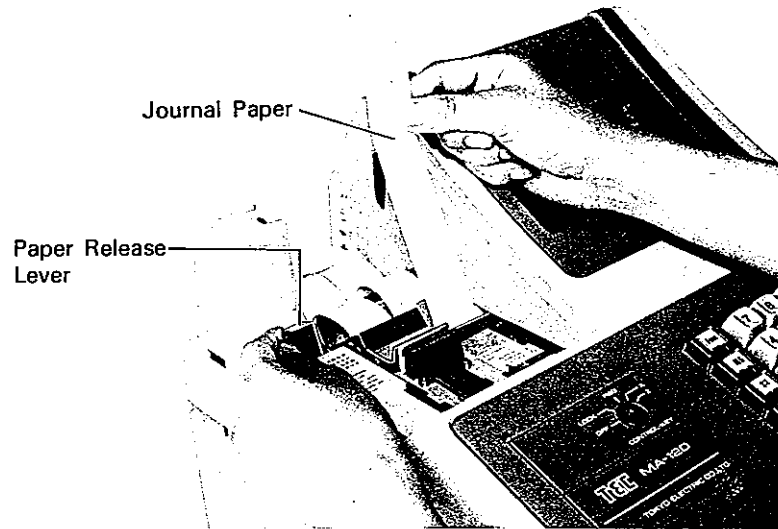
NOTE:

In case either one of the receipt paper tip or journal paper tip is taken out, use the paper free lever and pull it out by hand.

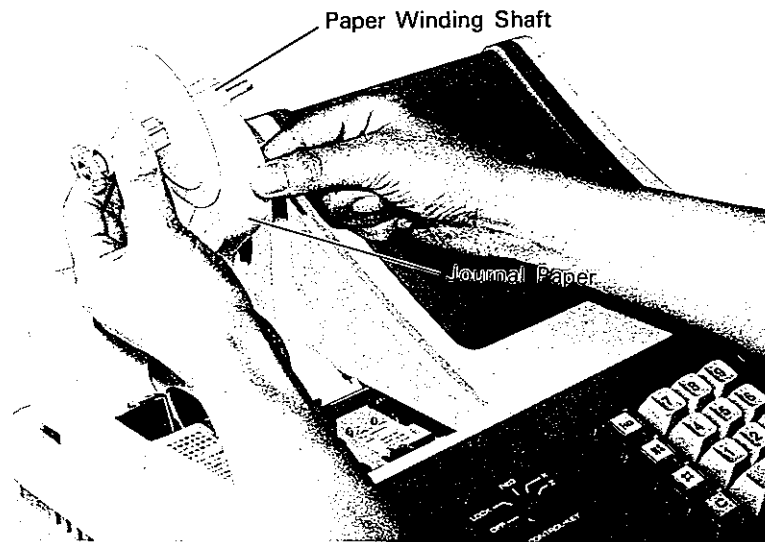
- 3) Load a new receipt paper and journal paper into the paper holder. Tightly fold up the end of paper about 6 inches as illustrated below, insert it along the paper inlet.



- 4) Depress **FEED** key to feed the receipt or journal paper until the folded end of paper comes out of printer. Thereafter, pull out the folded end of paper with fingers while pushing the paper release lever toward you.

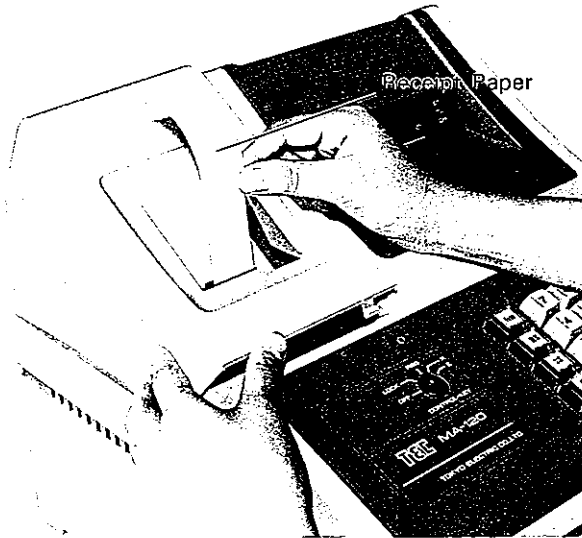


- 5) Insert the end of journal paper into the slit of paper winding shaft. Roll the paper onto the paper winding shaft about 2, 3 rolls.



- 6) Load the paper winding shaft into the roll holder (push the shaft until it properly seats to the holder).

- 7) Mount the paper cover by inserting it from the rear and depressing its front side. (At this time the receipt paper shall be inserted through the window of the cover.)



- 8) Cut off excess receipt paper with a cutter.

NOTE:

After the loading has been finished, depress **FEED** key to ensure that the journal paper is properly centered and it is properly taken up.

13. BUSINESS RECORDS GIVE EXACT SALES DETAILS

Business records give you an accurate audit of daily activity of your business. It is advised to thoroughly analyze and keep them carefully.

Discount sales total (⊖):

Represents total amount of discount.

Net sales (NS):

Represents net sales total (cash total + credit sales total)

Cash total (CA):

Represent cash total that is equal to the cash in drawer total.

Credit sales total (CR):

Represents credit sales total.

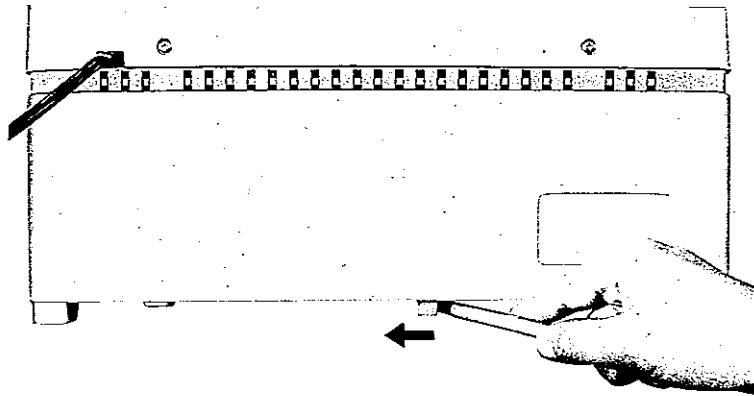
Sample of Auto-Reset Receipt (Model MA-121S)

Thank you Call again	
17.01 - 77	Date
. . Z . . Z .	Reset symbol
. 16	Number of items sold
. . . 96.55 NS	Net sales total
. . . 84.65 CA	Cash total
. . . 11.90 CR	Credit sales total
. 50 ⊖	Discount sales total
. 4 No.	Number of customers

14. RELEASING THE DRAWER

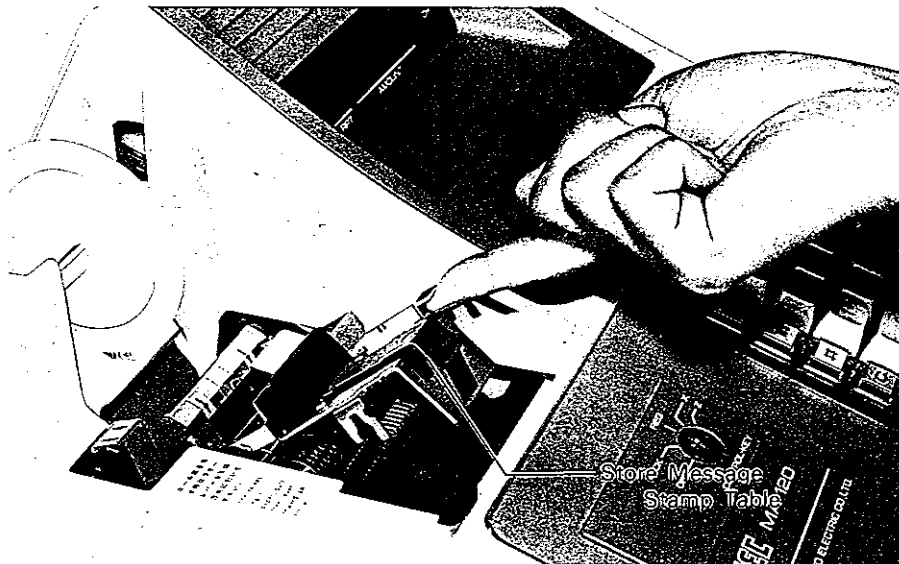
When registration is properly made, the drawer is automatically released. Releasing of the drawer during power failure or machine failure shall be made in the following manner:

- The drawer Release lever is provided in the middle of drawer bottom. To open the drawer push the lever in the direction of arrow.

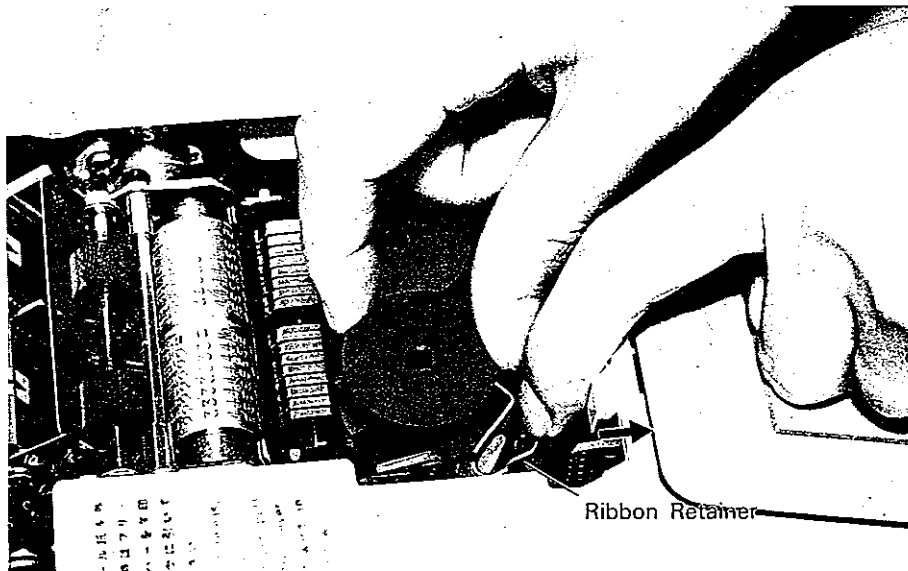


15. REPLACING INK RIBBON

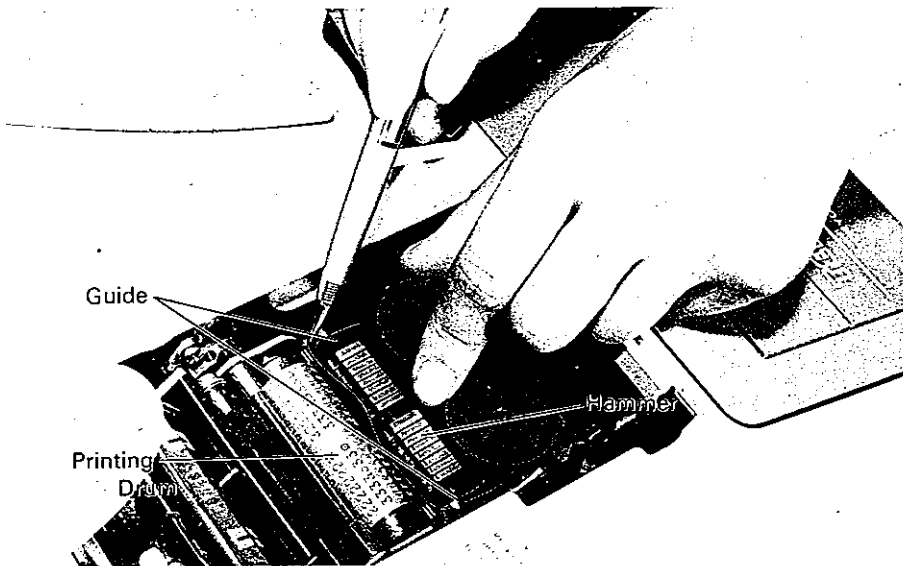
1. Remove the Paper Cover.
2. As shown in the photo, lift the front of Store message Stamp Table, then remove it.



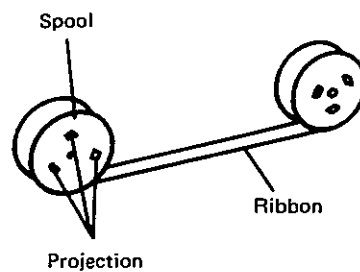
3. Pulling the Ribbon Retainer toward the direction of arrow, remove the ribbon together with left and right hand spools.



4. Remove the ink ribbon from the Ink Ribbon Guides at both sides of hammer.



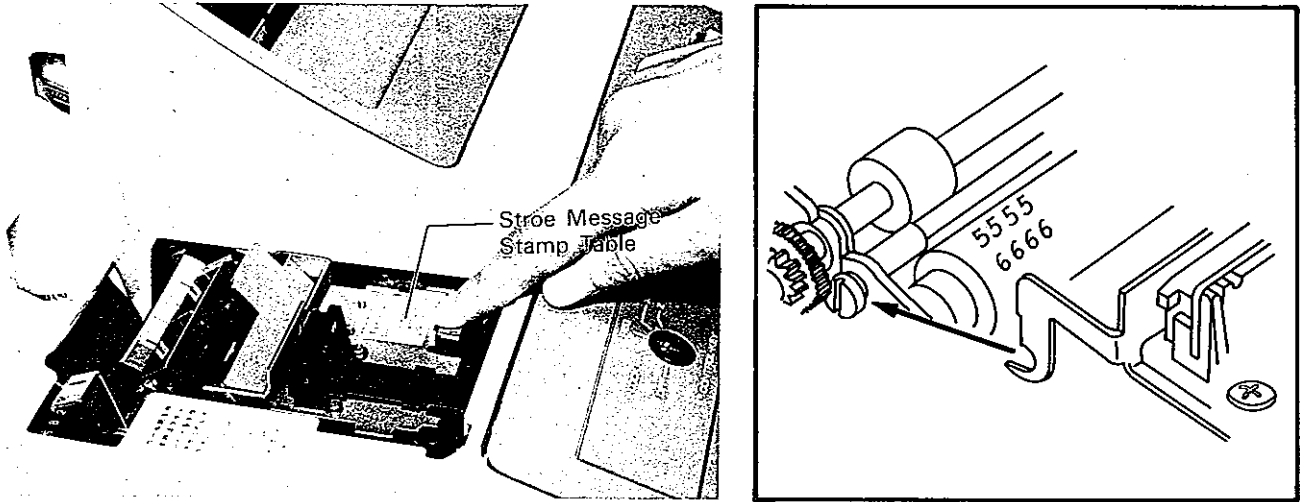
5. To set the ink ribbon spools (with a ribbon), set the projections of spool into the sockets while releasing the ribbon retainer.



6. Set the ribbon in position between Hammer and Print Drum along the Ribbon Guides.
7. With a finger attached to the circumference of the left or right hand spool, that can be turned to wind ribbon, wind the ribbon several turns to ensure that the ribbon is properly set.
8. Install the Store Message Stamp Table to the original position, and firmly set where it was.

NOTE:

Before installing Stamp Table to the screws as illustrated below, make sure to turn off power.



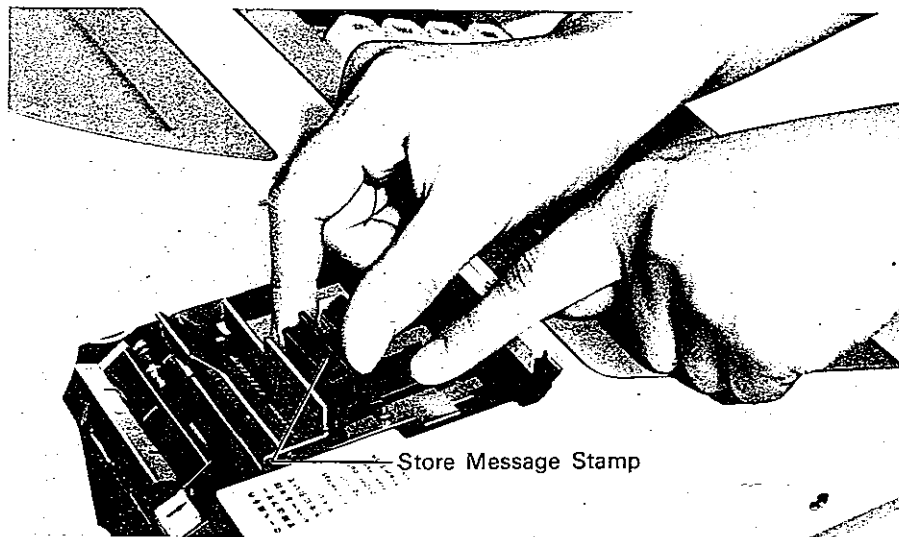
9. Install the Paper cover.
10. Feed journal paper with **FEED** key as long as to allow the paper end to firmly be set on the paper winding shaft.

NOTE:

For ensuring safety, replace the ribbon after business is over and the power switch is turned off.

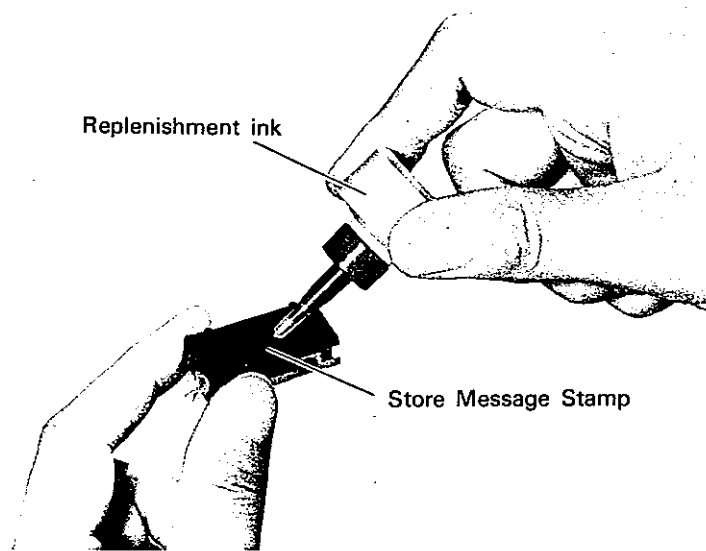
16. REMOVING THE STORE MESSAGE STAMP

1. Remove the Paper Cover.
2. While retaining the Stamp Table with a finger of your left hand, pinch the edges of Store Message Stamp with your right hand fingers, and pull it out.



17. RE-INKING TO THE STORE MESSAGE STAMP

1. According to the Para. 16, remove the Store Message Stamp.
2. supply ink for replenishment over the reverse side of the Store Message Stamp.



NOTE:

If ink is excessively supplied, it may overflow. Therefore, pour it drop for several times until it does no longer permeate. Use an ink designated by TEC.

18. MAINTENANCE AND INSPECTION REQUIREMENTS

1. Daily requirements

- (1) Automatic resetting of the register after closing your shop.
- (2) Cut and keep the printed journal paper.
- (3) Check and insure availability of receipt paper and journal paper.
- (4) Always keep the drawer released after closing your shop.
- (5) Turn off the control lock after closing your shop.

2. Periodic requirements

- (1) Inspect visibility of printing.
- (2) Clean the duster cover.

19. OTHER PRECAUTIONS

- 1) Do not wipe off the cabinet or other plastic parts with a thinner or other volatile oils. If dirt is hard to remove, wipe off them with a cloth soaked in neutral detergent and tightly squeezed.
- 2) Whenever the machine is not in use, cover it with the duster cover.
- 3) Keep this owners manual after you have read through.

20. SPECIFICATIONS OF TEC ELECTRONIC CASH REGISTER, MODEL MA-120 SERIES

Size:	Width 340 mm × Depth 420 mm × Height 288 mm
Weight:	9.5 kg
Voltage:	AC100V, 117V, 220V, 240V (±10V) 50/60 Hz
Power consumption:	at time of non-registering 50 Hz 8W 60 Hz 8W at time of registering 50 Hz 30W 60 Hz 30W
Size of receipt paper:	Outer diam. 70 mm × (Hole diam. 11.5 mm) × Width 28 mm
Size of journal paper:	Outer diam. 70 mm × (Hole diam. 11.5 mm) × Width 28 mm
Symbol of receipt and journal papers:	28R
Entry capacity:	6 digits max.
Totaling capacity:	7 digits max.
Printing speed:	2.1 lines/sec
Printing system:	Line printer intermittent rotary system
Ambient temperature:	0°C ~ 40°C (32°F ~ 104°F)